

formation of a complex between the human zona pellucida protein 3 and the sperm; and (b) determining the complex formed. The invention further provides a method to determine sperm activity comprising the steps of (a) contacting an appropriate concentration of human zona pellucida protein 3 with an appropriate amount of sperm under conditions permitting an acrosome reaction to occur; and (b) determining the extent of the acrosome reaction. Finally, this invention provides a diagnosis kit for sperm activity comprising three (3) compartments with (a) an appropriate amount of human zona pellucida protein 3; (b) the reagents used for establishing the conditions for allowing the binding of sperm; and (c) the reagents used for establishing the conditions for allowing an acrosome reaction.

In the Claims

Amend the claims as follows. Marked up copies of amended pages are attached.

1. A method to determine human sperm activity with human ova, comprising the steps of:

(a) contacting recombinant human zona pellucida protein 3 with an appropriate amount of sperm under conditions permitting the formation of a complex between the human zona pellucida protein 3 and the sperm; and

(b) determining the complex formed from step (a) as a measure of sperm activity.

19. A diagnosis kit for sperm activity comprising compartments with (a) recombinant human zona pellucida protein 3 and (b) one or more reagents selected from the group consisting of binding buffer, Ni-NTA resin, washing buffer, and a calcium ionophore control.